IS 3620 (1979): laterite stone block for masonry [CED 6: Stones]

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IS : 3620 - 1979
(Reaffirmed 2003)

Indian Standard

SPECIFICATION FOR LATERITE STONE BLOCK FOR MASONRY

(First Revision)

First Reprint JANUARY 1989

UDC 691.21-431:693.1

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2

May 1980

Indian Standard

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0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 17 December 1979, after the draft finalized by the Stones Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 The laterites occur in Andhra Pradesh, Bihar, Kerala, Tamil Nadu, Maharashtra, Karnataka, Assam, Goa, Meghalaya and Orissa and is mainly used as building blocks for construction of masonry in building. The term laterite stone has been applied generally to a group of rocks, which occur as surficial blankets. It is the residual weathering products of certain rocks containing silicates, such as basalt, granite and slate.

0.3 The physical properties of this stone vary cosiderably from place to place. Freshly quarried laterite is soft and porous but when exposed to atmospheric conditions it hardens and makes a very tough material. Therefore, it is always desirable that these stones should be quarried sufficiently ahead of use. But the laterite stone of certain minimum requirements in strength, etc, is only suitable for masonry construction and therefore, a careful selection in the procurement of this stone is necessary before use. This standard has therefore been formulated to provide a guidance for the selection of such stone for the purpose. This standard was first published in 1966.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this stadard.

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard lays down the requirements for dimensions, physical properties, and workmanship of rectangular blocks made from laterite stone, used in the construction of walls and partitions.

2. GENERAL REQUIREMENTS

2.1 The stone blocks shall be without any soft veins, cracks, cavities, flaws and similar imperfections.

2.2 The blocks shall be exposed preferably for a period of three months before being used in the construction of masonry to ensure adequate stabilization However, exposure to rains should be avoided.

3. DIMENSIONS AND TOLERANCES

3.1 The standard size of laterite stone blocks shall be as specified in Table 1.

TABLE 1 SIZE OF LATERITE STONE BLOCKS

(All dimensions in millimetres)

LENGTH	BREADTH	THICKNESS
(1)	(2)	(3)
390	190	190
490	190	190
590	290	290

3.2 Sizes other than those mentioned in Table 1, may be supplied if agreed to between the purchaser and the supplier.

3.3 A tolerance of ± 5 mm shall be allowed on dimensions specified in Table 1.

4. PHYSICAL PROPERTIES

4.1 The physical properties of the laterite stone blocks shall conform to the requirements given in col 3 of Table 2 when tested in accordance with the provision of the respective Indian Standard given in col 4 of Table 2.

TABLE 2 PHYSICAL PROPERTIES OF LATERITE STONE BLOCKS

(*Clause* 4.1)

Sl No.	Characteristic	Requirement	Method of Test, Ref to
(1)	(2)	(3)	(4)
i)	Water absorption	Not more than 12 percent by mass	IS : 1124-1974*
ii)	Specific gravity	Not less than 2·5	IS : 1124-1974*
iii)	Compressive strength	Not less than 3·5 N/mm²	IS : 1121 (Part I)-1974†

NOTE — The compressive strength is for saturated dry samples.

*Method of test for determination of water absorption, apparent specific gravity and porosity of natural building stones (*first revision*).

†Method of tests for determination of strength properties of natural building stones: Part I Compressive strength (*first revision*).

5. WORKMANSHIP

5.1 The blocks shall be of uniform shape with straight edges at right angle.

5.2 The edges of the block shall be rough and chisel dressed as prescribed in IS : 1129-1972*.

6. MARKING

6.1 The blocks may be marked in a suitable manner with the manufacturer's identification mark or initials.

7. SAMPLING AND CRITERIA OF CONFORMITY

7.1 Lot — In any consignment all the blocks from the same quarry shall be grouped together to constitute a lot.

7.1.1 Samples shall be selected and tested separately for each lot for determining its conformity or otherwise to the requirements of the specification.

7.2 The number of blocks to be selected for the sample shall depend upon the size of the lot and shall be in accordance with Table 3.

*Specification for dressing of natural building stones (*first revision*).

TABLE 3 SAMPLE SIZE AND CRITERIA FOR CONFORMITY

(*Clause* 7.2)

No. of Blocks	No. of Blocks to be Selected in the Sample	Permissible No. of Defectives	Sub-sample Size No.
(1)	(2)	(3)	(4)
Up to 100	5	0	3
101 to 300	8	0	3
301 to 500	13	0	6
501 and above	20	1	6

7.2.1 The blocks in the sample shall be selected at random and in order to ensure the randomness of selection, random number table may be used (*see* IS : 4905-1968*).

7.3 All the blocks selected as given in col 2 of Table 3 shall be examined for general requirements (*see* **2**), dimensions (*see* **3**), workmanship (*see* **5**). Any block failing in any one or more of the above requirements shall be considered to be defective. A lot shall be considered as conforming to these requirements if the number of defectives obtained is not more than the permissible number of defectives given in col 3 of Table 3.

7.4 The lot having been found satisfactory with respect to general requirements, dimension and workmanship, shall be tested for physical properties. For this purpose a sub-sample of size as given in col 4 of Table 3 shall be selected at random. These blocks shall be first tested for compressive strength and then for water absorption and specific gravity. A lot shall be considered to have satisfied the requirement of physical properties if none of the blocks tested for these requirements fails in any of these tests.

*Methods for random sampling.

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